ROCHESTER

THE CITY PHOTOGRAPHIC

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John Reeves
from
Brother

THE Eastman Headquarters. No manufacturing is done in these buildings, the two and a half acres of floor space being devoted to offices, shipping rooms, testing, finishing, and storage. There are over four hundred employees here, about seventy-five per cent. of whom are on the office and shipping forces.

ROCHESTER

THE CITY PHOTOGRAPHIC

PUBLISHED BY THE EASTMAN KODAK CO., AT ROCHESTER, NEW YORK, ON THE OCCASION OF TWENTY-NINTH ANNUAL CONVENTION OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA. JULY NINETEEN TO TWENTY-FOUR, NINETEEN HUNDRED AND NINE

ROCHESTER, THE CITY PHOTOGRAPHIC

FIRST came man—and then pictures. No matter what the race,—Egyptian, Aztec, true Mongolian, or nomadic Indian,—there were pictures, ages of pictures, before there was a written language. The rude drawing of stone upon stone, of pigment upon birch bark, or the laborious carving with a whale's tooth upon wood all prove that in man there is a primitive and inherent instinct toward the delineation of the objects that surround and interest him. From childhood his appetite for pictures is insatiable. His first books are picture books. The magazines he buys are illustrated—profusely so. The few that carry no pictures are minor in importance so far as popularity is concerned, though they may be, and, indeed, often are, of the highest literary merit.

And in this picture world, what a part photography is playing! Within the memory of those yet living there was the first photographic portrayal of the human face. An exposure of five minutes in the full glare of bright sunlight was required, and the results were the wonder of an astonished world. Our fathers wondered at the photographers' necromancy. Our children look, as a matter of course, upon pictures that show, with minute sharpness, a humming bird upon the wing, and moving pictures entertain or amuse them, but they no longer marvel at the methods by which the pictures are made.

The moving picture—Did you ever consider the stupendousness of this single branch of photography? A moving picture projecting machine shows fifteen pictures per second, nine hundred a minute, or over 25,000 in the

course of a show of average duration, and there are over 5,000 moving picture shows operating in the United States alone, all of which change pictures frequently. Every month's consumption of film means a positive print for every man, woman, and child in the country. But the moving picture is by no means an American institution; it has taken possession of Europe, has fascinated the Asiatic, charmed the South Sea Islander, invaded the Transvaal, and, along with the phonograph, has entertained princes and potentates as well as newsboys. And in the Eastman factories is made more than ninety per cent. of all the film, both negative and positive, that is used for moving picture purposes the world over.

And the Kodaker—literally he is numbered by the millions now—uses his film by the thousands of miles, and he, or those who do the work for him, consume papers by the thousands of acres, and chemicals by the train-load. And what does all this mean for the professional? It means that he has the benefit of a plant equipment and an organization that would be impossible without the moving picture and amateur business to bear the brunt of the expense. It means the utmost skill in every department, perfect facility for scientific and practical experiment, special machinery, buildings of special construction—in short, it means that anything that can help to make the perfect product can be and is done. It means that Rochester, the City Photographic, has become the Mecca to which the inventor of improved photographic processes or apparatus invariably turns. And in the Eastman factories is the practical experience that can sift the wheat from the chaff and give to the world that which is worth while.

Fun is sometimes poked at photographic manufacturers on the ground that so little silver is required to cover a photographic plate. But the fact remains that at our Kodak Park plant we are the largest consumers of silver —outside the mint—in the United States and probably in the world, the consumption of pure bullion amounting to no less than a ton a week.

As an illustration of the thoroughness of our equipment and how our film business has helped in perfecting our other products, take this very subject of silver bullion, which we, of course, convert to silver nitrate. Back of the perfect photographic product, perfect salts and perfect chemicals are absolutely essential. When we cannot secure them in the desired purity, *we make them.* Nitric acid is used, in connection with silver bullion, to make silver nitrate.

We make the nitric acid; we go back of that even and make the sulphuric acid from which, in combination with nitre, the nitric acid is made. This acid plant made necessary an enormous stack to carry off the fumes. This stack is 366 feet high, the highest in America. This acid plant was made possible by reason of our film business, because the nitric acid which we make is used not only for nitrating the silver but is consumed also in enormous quantities for cutting the raw cotton which forms the transparent film base.

We are accustomed in this country to stupendous figures—and when they are applied to the output of a steel mill or to the tonnage of a railroad we think not so much of it, because the products themselves are large. But a moving-picture negative is such a tiny little thing, a post

card is so small, an 8 x 10 plate is so insignificant as compared with a steel rail, and a camera so unpretentious alongside of a locomotive or an automobile, that we don't look for mechanically big things in a photographic factory. In photography we think in grains and ounces and square inches—yet so great is the consumption of the various products, that to contemplate the Eastman works we must think in acres and tons. In our Kodak Park plant twenty-three acres of floor space are given up to the manufacture of sensitized photographic goods; the new plate building now under construction will bring this up to a total of more than twenty-eight acres; while our other Rochester factories, with combined floor area of over nine acres, bring our total area of floor space devoted exclusively to the photographic business to more than thirty-seven acres in Rochester alone—and there is still more under construction. There are nearly 4,000 Rochester employees, and the capacity of our boilers is over 6,700 horse power. The refrigerating machines at Kodak Park have a cooling power equal to the melting of 1,920 tons of ice daily. The works there are operated by 743 motors, varying in power from 1/12 to 75 horse power, and these, with the 7,000 incandescent lights, are furnished current by five engine-driven electric generators with a capacity of 1,800 kilowatts, or 3,000 horse power. In the Kodak Park grounds, consisting of forty-three acres, are two and a third miles of water mains, one and a third miles of brick pavement, and three-fourths of a mile of railroad trackage.

Over on another page there's a picture of the little 35-horse-power Buckeye engine, which twenty years ago drove the entire Eastman plant. To-day, 'tis but a pigmy beside the

giants at Kodak Park; indeed, it would fall far short of furnishing half the power for the smallest of our present-day factories. Such a growth must have back of it some underlying germ, some basic principle, some sure foundation. Much has been said of plant and machinery and acreage and horse power. But above them all is something more potent — Man Power. 'Tis the Spirit of Doing Things Better — therein lies the secret of this upbuilding of the world's greatest photographic industry.

This little book is published that Rochester's guests, the professional photographers, may carry away with them something tangible to help them keep fresh in their memories a few of the things which they saw while in the City Photographic. If their visit to the works, and what we have told in this brochure, has impressed them with the thought that 'tis to the amateur and to the moving picture that we owe the great bulk of our business, we still want the professional to remember that his is the business we cherish. 'Twas for him that we first made goods; he has the technique, the mastery of the art to best appreciate our most successful efforts, and he has the knowledge that enables him to criticise justly when our efforts fall short. The professional photographer fits into our plan of progress. Just as the other business, by its sheer bulk, enables us to give to the professional the benefit of a marvelous plant and of high-priced talent, so does the professional keep us ever on our mettle.

His interests and our's are closely interwoven. He, too, is advancing. His art, his work in the world, is daily becoming more fully appreciated. May this visit of the photographer to the home of the manufacturer prove

mutually helpful. May it be an aid to both in promoting the Spirit of Doing Things Better.

EASTMAN KODAK CO.

Rochester, N. Y.
July, 1909.

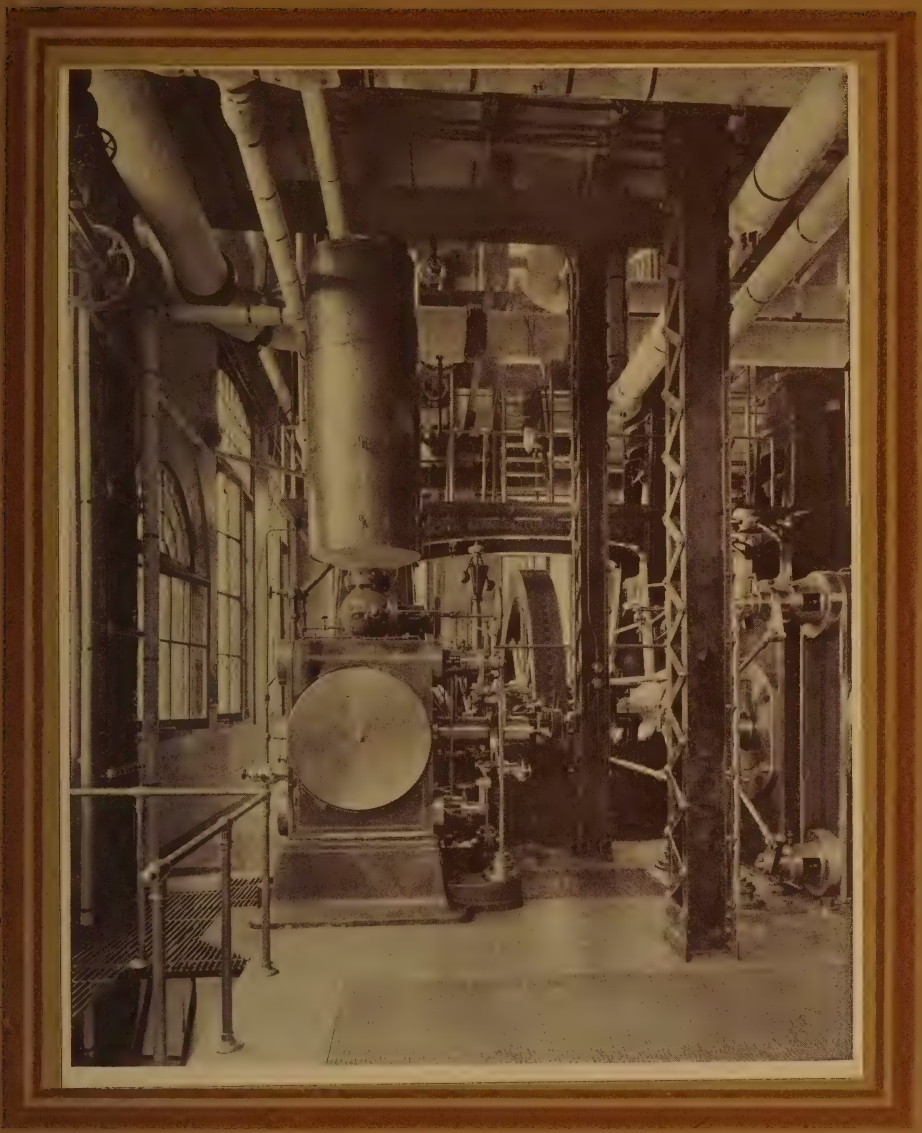
SHRUBBERY AT KODAK PARK

KODAK PARK

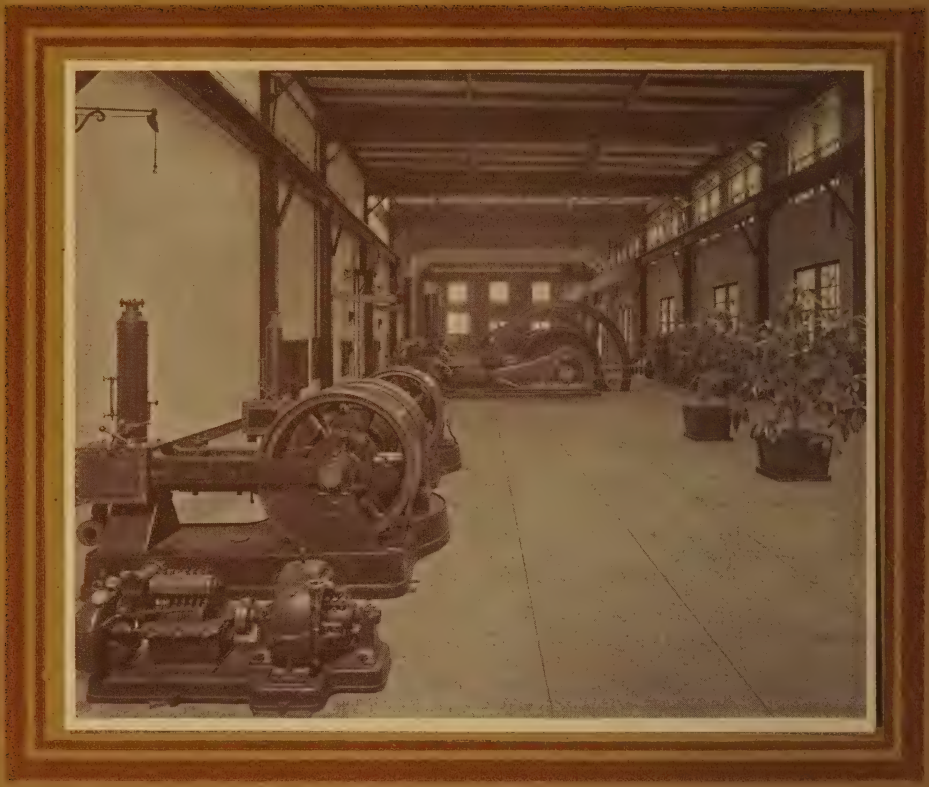
LAND AREA, 43 ACRES

FLOOR AREA, 28 ACRES

IN this boiler room is the seat of the energy that drives, and lights, and cools, and heats the Kodak Park Plant. There are in this power house sixteen boilers with an actual capacity of 6,000 horse power. Above the boilers are located coal bunkers having a capacity of 3,200 tons, from which the coal drops through chutes to mechanical stokers. About eighty tons of coal are burned per day, the waste gases passing off through fuel economizers.



HERE is shown one of the ten refrigerating machines used for controlling temperatures in various parts of the plant, the total cooling capacity of these machines being equal to that of the melting of 1,920 tons of ice in twenty-four hours.



THERE is practically no shafting at Kodak Park, the machinery being driven by seven hundred and forty-three motors ranging in size from one-twelfth to seventy-five horse power. In this room the power is generated by five engine-driven dynamos with a total capacity of 1,800 kilowatts or 3,000 horse power. These generators also furnish the current for the 7,000 incandescent lamps.

ALONGSIDE the steam-driven electric giants which now furnish the power at Kodak Park stands the little thirty-five horse power Buckeye engine (in foreground of illustration) which twenty years ago furnished power for the entire Eastman plant. It has, until recently, been in active service, but from now on will enjoy its well-earned rest in a model engine room.

BENEATH the trap-doors in the floor are the great barrels (shown on the opposite page) which hold, altogether, 200,000 pounds of the syrup-like mixture from which the film base is made. Technically, this is known as cellulose nitrate for the ordinary film, and cellulose acetate for the new non-inflammable film now being used for moving pictures. In the Kodak Park vernacular, the film base while in this semi-liquid state is called "Dope."

THE small barrel tells the story of the volume of the film business in 1891. It had a capacity of 500 pounds. The present barrels hold 4,000 pounds each, and fifty of them are now running night and day.

PERHAPS, one of the most impressive sights in the works is the operation of the overhead traveling cranes. In the roll-coating building is one of these cranes with a 45-foot span and a capacity of twenty tons, three electric motors, all under control of one operator, giving the different motions. In addition, are two smaller cranes, each of five tons capacity. The crane shown in the illustration is one of those having a capacity of five tons, and is used in moving the tanks of "dope" to and from the mixers.

THE acid plant can hardly be called one of the show places at Kodak Park, but in its bearing upon the quality of our products it is immensely important. The sulphur-burning furnaces here shown mark the first step in the manufacture of sensitized silver products—the making of the sulphuric acid, which in combination with nitre makes the nitric acid with which the silver bullion is nitrated for photographic purposes.

PAPER storage under proper conditions is an important item in such a plant as this. In this building there is storage room for 11,800 rolls—paper enough, 41 inches wide, to reach from New York to San Francisco.

THE manufacture of paper boxes for papers and plates makes a big industry of itself. This illustration shows but a small part of the department, which has a capacity of 25,000 boxes per day. In addition, we make millions of envelopes for papers in dozens, and use millions of folding cartons for films.

THE railroad warehouse, on a spur from the New York Central, is large enough for a town of several thousand inhabitants. This is used mostly for incoming freight, the outgoing goods being shipped from the State Street buildings, except glass plates in car-load lots which are shipped directly from the Park.

OUR construction department has its own drafting room, where plans for special buildings and machinery are made by experts who know the peculiar requirements of our business. Owing to much of the manufacturing being done in dark rooms, ventilation becomes a matter of prime importance. In the roll-coating building, for instance, are two ventilating fans, each 160 inches in diameter, giving a complete change of air every seven minutes. Heating, cooling, and ventilating have to be looked to with the utmost care, and in this work our construction department has become expert.

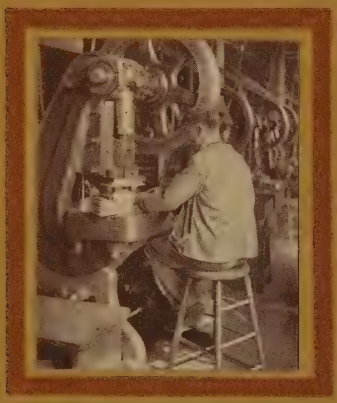
CARE for the health, safety, and comfort of our employees is one of the first considerations at all of our plants. The illustration above shows one of the two dining-rooms of approximately the same size which are in a separate building erected for the purpose, one of these rooms being reserved for the men, the other for women. Meals are served at cost.

DOWN the passageways to the right of these time clocks are the pay booths, and all so conveniently arranged that the 2,000 Kodak Park employees can be registered out and paid off in ten minutes.

THE above is a reproduction from the architect's drawing, showing the new plate building now under construction. This building is to be 357 x 338 feet and will add 229,000 square feet or 5¼ acres to the present floor space. It will have a coating capacity of nearly 1¼ acres of glass per day. It is to be of reinforced concrete construction, faced with brick, and will be the largest single building devoted to the manufacture of photographic goods in the world.

EXCAVATING FOR THE NEW PLATE BUILDING

THE company has four large factories in Rochester devoted to the manufacture of cameras and accessories. This, the largest of the four, is the Kodak factory in which there are on the average more than one thousand employees. It has a floor area of nearly three and a quarter acres, while an extension now under construction will bring it up to over four acres. The power plant has a capacity of 450 horse power.

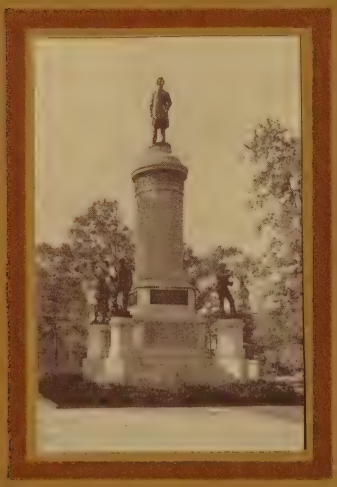


MODERN equipment is found in every department of the Kodak Camera works, the great presses using half a million pounds of brass annually and a thousand pounds of strip steel per day. The annual consumption of aluminum is the largest in the United States.

THE Century Camera and Folmer & Schwing divisions use every available foot of the 48,000 square feet of floor space in this building, the growing popularity of the Century Professional Apparatus, the increasing use of Graflex cameras for speed work, and of the marvelous Cirkut camera making it one of the busiest of the busy Eastman factories. The "Spirit of Doing Things Better" is instilled into every workman and the result is "Century Quality."

THIS is the home of the Premo Camera, located, by the way, directly across the street from Convention Hall, and has some 64,000 square feet of floor space, 200 employees, and a power plant of 250 horse power.

IN the Blair Camera division, whose factory is here shown, the well-known Hawk-Eye Cameras are manufactured. It is here that the Eastman Plate Tanks are also made, and the Eastman tested Chemicals put up. This building has a floor space of 49,000 square feet and averages 150 employees.



ROCHESTER'S Convention Hall, where the sessions of the Twenty-ninth Annual Convention of the Photographers' Association of America were held.

ELSEWHERE

This is a booklet of Rochester, the City Photographic, but 'twould be incomplete were there not just a word of the Eastman factories elsewhere. Rochester is most emphatically the Eastman headquarters, but the Seed plant at St. Louis, with its splendidly equipped factory, and the Jamestown works, where they know how to make collodion paper, must not be overlooked. Just across the lake, in Toronto, is another important part of the concern, where they make cameras and plates and papers and films for the great and growing trade of our sister country to the north. This Canadian manufactory is a large business of itself, employing some 250 people, and occupying modern buildings having a floor space of over two acres, while a new building, now in the course of erection, will add seventy per cent. to the capacity of the plant.

In Harrow, England, are factories that are second only in importance to those at Rochester, the principal output being plates and papers for the European trade. The Harrow factory has over five acres of floor space and between four and five hundred employees. And in far-off Melbourne the Eastman goods are now made in Eastman factories for delivery to the photographers of Australia, New Zealand, and the South Sea Islands.

THE EASTMAN PLANT AS IT LOOKED IN 1889

EASTMAN KODAK CO.